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THE ROLE OF DIGITAL LEISURE IN FAMILY CONTEXT WITH ADOLESCENTS

A systematic review

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KEYWORDS

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ABSTRACT

This systematic review was carried out to provide information about the role of digital leisure in family relationships with adolescent. After conducting a search in the main databases, we present the findings of 14 articles from 2008 to 2020. Nine included articles used quantitative methodology and were theoretically based on bidirectional socialization and bottom-up technology transmission. The use of questionnaires is highlighted, and the most common sample size is parent-child dyads with adolescents in secondary education. This study evidence the importance of the role of digital leisure within the family context with adolescents and reveals a modification of family dynamics.

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1. Introduction

Information and Communication Technologies (ICTs) have become part of our daily lives thanks to the internet. In this regard, the report entitled *Digital 2021* reveals that the number of people using the internet in the world is continuously increasing (We Are Social & Hootsuite, 2021). At the same time and given that the home is the preferred place to access the Internet, the introduction of ICTs in the family sphere is also increasing over the last few years. Consequently, according to data published by the Statistical Office of the European Communities (Eurostat), in 2021, 92% of households in the European Union (EU) have access to the internet with smartphones, laptops and tablets being the most common digital devices used to connect to this service. This irruption of ICTs in the home environment has created what Torrecillas-Lacave et al. (2017) define as hyper-connected households with a strong presence of digital devices, especially in families with adolescents. However, the domestication of ICTs has not only changed the very appearance of the household, but has also encouraged their use among family members, impacting on their leisure practices.

In accordance with López et al. (2015) the incursion of ICTs and internet in society is offering new leisure options and changing how, when and where these activities are experienced. If we check in the aforementioned reports the most popular activities practiced through these digital media, we will find a significant growth in participation in social networks and video games. This kind of activities has given rise to what Nimrod and Adoni (2012) have conceptualized as online leisure, virtual leisure, and cyber leisure characterized by new features of leisure experiences such as greater synchronicity and interactivity. In this regard, even though the data show that digital leisure is becoming increasingly popular in all age groups, it is known that the pursuit of leisure has become a more important need between the adolescents (Cheng et al., 2020). In fact, the Spanish National Statistics Institute (INE, 2021) asserts that ICTs use to this end is almost global among people from 10 to 15 years of age.

As Heintzman states (2013) "leisure may be experienced within the various contexts of life such as family" (p.9), so we must consider that digital media is transforming not only leisure activities at the individual level, but also at the family level.

The family is one of the most valued institutions in people's lives, as it is the main socializing agent (Huayamave et al., 2005). However, as there is no univocal definition of family, conceptualizing it is complex. According to Rodrigo and Palacios (1998), family is understood as the union of people who share a vital project of existence in common, in which strong feelings of belonging to this group are generated, in which there is a personal commitment among its members and intense relationships of dependence, intimacy and reciprocity are established. Along these lines, family leisure is positioned as an opportunity to strengthen relationships between family members and foster family cohesion (Martelo et al., 2020).

Furthermore, it should be noted that, on the one hand, as a result of the various social transformations that have occurred in recent years, the family form has been altered, giving rise to multiple family structures (Gutiérrez et al., 2016). On the other hand, the incorporation of ICTs and the Internet in households has led to qualitative changes in family dynamics, with an impact on the way in which parenting is exercised (Vaquero, 2020).In this respect, from the approach of positive parenting framework emanating from the Council of Europe's Recommendation 19 (2006) of the Committee of Ministers to Member States, there are different principles for the positive exercise of parenting that implicitly carry aspects related to digital leisure in the family and the role it should have. Specifically, it refers to the need for parental supervision, the establishment of rules and limits, as well as showing interest in the children's world to validate their experiences (Quintana & López, 2013).

The purpose of this study is to conduct a systematic review of the available research on the role of digital leisure within the family context involving adolescents. More precisely, we aim to answer the following research questions in relationship to the family context with adolescents:

(1) What are the references that have analyzed the role of digital leisure as the main research objective?
(2) What methodology has been used for the study of digital leisure?
(3) What are the theories underlying the research on digital leisure?
(4) What are the most relevant results of research on digital leisure?

2. Method

This systematic review was conducted following the PRISMA 2020 protocol (Preferred Reporting Items for Systematic Review and Meta-analysis Protocols) published by Page et al. (2020). This method was chosen for its explicit research questions and methodological rigor and can even be replicated by other authors (Moher et al., 2015).

2.1. Literature review

To answer the research questions and knowing that digital leisure requires an interdisciplinary approach, the authors conducted a literature search using five major electronic databases (Web of Science [WoS] Core Collection, Scopus, ERIC, APA PsycARTICLES and Sociological abstract). The first two databases were chosen for their multidisciplinary character, and their high academic and scientific level. The following databases respond to specific disciplines considered relevant in this field of study, such as Education, Psychology and Sociology.

A search was carried out in all selected databases, using the terms family, digital and Internet on the topic (title, abstract and Keywords), separated by the boolean AND.

These search terms were agreed upon by all the authors of the study. Firstly, the term family was used instead of terms such as parents and adolescents, since the focus on a particular group would limit the possible scope of the literature concerning the joint use of ICTs for leisure activities, as most research has focused on ICTs use for this activity on an individual level. In this sense, we decided to select those articles where, without discriminating according to family structure, the sample was conformed at least among two cohabiting family members in the same household (mother or father and adolescent).

Secondly, it was decided not to include terms such as leisure, e-leisure, leisure online, and others, inasmuch as an author can refer to digital leisure activity without it being conceptualized as such. In this sense, given that digital leisure, as well as leisure, are contested terms, for the purposes of this study we followed a holistic expression of leisure (Heintzman, 2013), understanding digital leisure as any activity in which people turns at will, carried out through digital devices and services (computers, mobiles, internet, among others) such as participating in social networks, playing online games, or surfing the internet. Hence, it was decided to conduct a broad search using the terms digital and internet, allowing for the inclusion of any online activity performed via these digital devices and services that each person would subjectively consider as leisure time.

Finally, results were refined to scientific articles, eliminating any other scientific format such as books or conference contributions and was also limited to articles published up to 2021, taking as reference the complete years. However, no limitations were applied to publications in other languages.

2.2. Exclusion criteria

The authors agreed to apply the following exclusion criteria, rejecting articles when:

(1) The article does not examine leisure activities between parents and adolescents. On the contrary, the paper focuses on leisure activities of only one member of the family as the contribution made by Chiribuca & Teodorescu (2020). To better understand this exclusion criteria we should mention that although there is no consensus on the age range in which adolescence is encompassed (Sawyer et al., 2018), for the purposes of this study, we have considered this stage as the period between 9 years old, when early adolescence begins according to Dahl et al. (2017) and 17 years old, the age at which middle adolescence ends (Hernando et al., 2013). So, there are some articles such as the one published by Zerle-Elsäßer et al. (2021) that, while including adolescents up to the age of 12, has a population mean of 5.5 years, so most of its data refer to children, who are not the target population of this review. That is why we decided to reject it.

(2) The article discusses leisure, but this is not performed through digital media, thus not concerning digital leisure. For example, the article by Earley et al. (2019).

(3) The methodology of the study is not empirical (this is the case of other systematic reviews or meta-analyses).

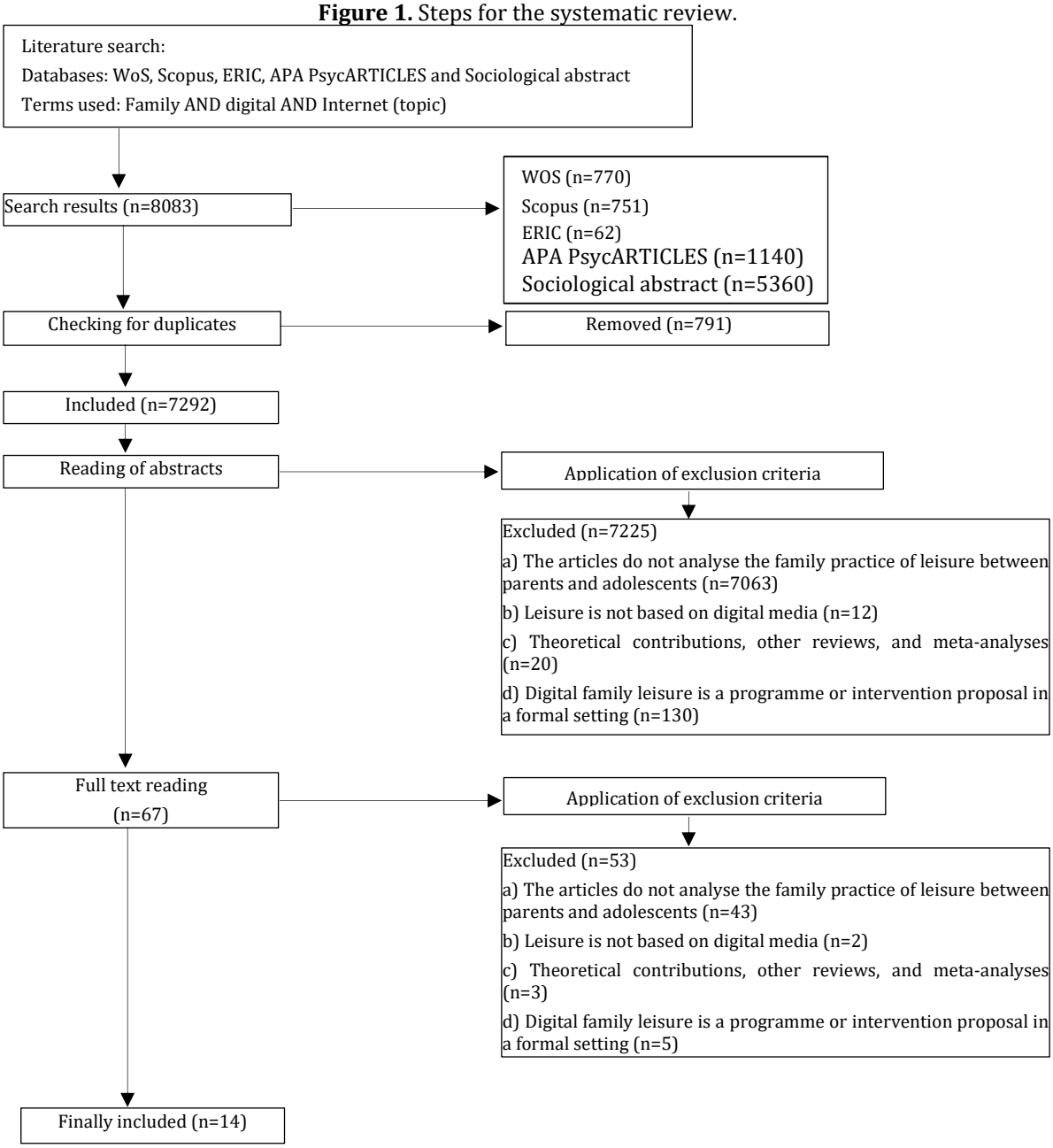
(4) The study is framed within a program or intervention proposal promoted by a formal institution such as a school or Health Centre. An example of the dissemination of the latter is the article published by Akard et al. (2020).

2.3. Procedure

Firstly, following the PRISMA 2020 protocol, the literature search was carried out by one of the authors on January 10, 2022, under the terms, booleans and delimitations specified above. This author selected and extracted the metadata of 8083 existing articles in WoS (n=770), Scopus (n=751), ERIC (n=62), APA PsycARTICLES (n=1140) and Sociological abstract (n=5360).

Secondly, another author deleted 791 duplicated articles through the EndNote program (Hupe, 2019). Thirdly, all the authors together applied the exclusion criteria by which a total of 7225 documents were eliminated by reading the abstract. The remaining articles (n=67) were selected for detailed reading, after which 53 articles were excluded. Finally, 14 studies matched the exclusion criteria and were thoroughly analyzed (see Figure 1).

Figure 1. Steps for the systematic review.



Source: Adapted from Moher et al. (2009).

The database used in this study is public and can be accessed via the following DOI: 10.17632/syv5mxvtz7.1

3. Results

3.1. Bibliographic characteristics of included studies

The analysis of the characteristics of the included studies focused on authorship, year of publication, article title, journal, affiliation, and number of citations.

As shown in table 1, most of the papers were co-authored (n=10) between 2008 and 2020, especially in the year 2015 (n= 3). Journals such as Journal Children and Media, New media & society and Information, Communication & Society published two papers each. According to affiliation, most of the production was developed in Latin America (n=5) and Europe (n=5). In addition, Padilla-Walker et al. (2012) and Correa et al. (2014) were the most cited papers with 207 and 134 citations respectively in Google Scholar.

Table 1. Bibliographic characteristics of included studies

Author(s)	Year	Title	Journal	Affiliation	Citation
Wang, Y.	2020.	Parent–child role reversal in ICT domestication: media brokering activities and emotional labours of Chinese "study mothers" in Singapore.	Journal of Children and Media.	University of Technology and Design, Singapore.	7.
Galperin,H. & Arcidiacono, M.	2019.	Learning from or leaning on? The impact of children on Internet use by adults.	New Media & Society.	University of Southern California, USA.	8.
Nelissen,S., Kuczynski,L., Coenen,L. &Van den Bulck, J.	2019.	Bidirectional socialization: An actor-partner interdependence model of Internet self-efficacy and digital media influence between parents and children.	Communication Research.	University of KU Leuven, Belgium.	9.
Nelissen, S. &Van den Bulck, J.	2018.	When digital natives instruct digital immigrants: Active guidance of parental media use by children and conflict in the family.	Information, Communication & Society.	University of KU Leuven, Belgium.	73.
López-Sintas, J., Rojas-DeFrancisco, L. & García-Álvarez, E.	2017.	Home-based digital leisure: Doing the same leisure activities, but digital.	Cogent Social Sciences.	Autonomous University of Barcelona, Spain.	17.
Correa, T.	2016.	Acquiring a new technology at home: A parent-child study about youths' influence on digital media adoption in a family.	Journal of Broadcasting & Electronic Media.	University of Diego Portales, Chile.	28.
Correa, T.	2015.	The power of youth: How the bottom-up technology transmission from children to parents is related to digital (in)equality.	International Journal of Communication.	University of Diego Portales, Chile.	49.
Author(s)	**Year**	**Title**	**Journal**	**Affiliation**	**Citation**

Eynon, R. & Helsper, E.	2015.	Family dynamics and Internet use in Britain: What role do children play in adults' engagement with the Internet?	Information, Communication & Society.	University of Oxford, UK.	71.
Correa, T., Straubhaar, J., Chean, W. & Spence, J.	2015.	Brokering new technologies: The role of children in their parents' usage of the Internet.	New Media & Society.	University of Diego Portales, Chile.	103.
Correa, T.	2014.	Bottom-up technology transmission within families: Exploring how youths influence their parents' digital media use with dyadic data.	Journal of Communication.	University of Diego Portales, Chile.	134.
Barrera, D. & Duque, L.	2014.	Family and Internet: considerations on a Dynamic Relatioship.	Revista Virtual Universidad Católica del Norte.	University of Antioquia, Colombia.	38.
Paus-Hasebrink, I., Bauwens, J., Dürager, A. & Ponte, C.	2013.	Exploring types of parent–child relationship and Internet use across Europe.	Journal of Children and Media.	University of Salzburgo, Austria.	48.
Padilla-Walker, L., Coyne, S. & Fraser, A.	2012.	Getting a high-speed family connection: Associations between family media use and family connection.	Family Relations.	University of Brigham Young, EEUU.	207.
Khoo, E., Cheok, A., Nguyen, T. & Pan, Z.	2008.	Age invaders: Social and physical inter-generational mixed reality family entertainment.	Virtual Reality.	National University of Singapore, Singapore.	90.

Source: own elaboration

3.2. Characteristics of the research methodologies

Table 2 shows the technological resources of the included studies, the type of research employed, the sample design and the investigation instruments used.

Eighteen digital resources were collected, with the Internet (n=10) standing out, followed by the cell phone (n=7) and the computer (n=6). In turn, the predominant use of quantitative research (n=9) was observed, followed by qualitative (n=2) and mixed (n=3) studies.

Regarding the sample design, most of the quantitative studies analyzed parent- adolescent dyads belonging to the same family unit. In qualitative studies, the study carried out by Padilla-Walker et al. (2012) stands out for analyzing triads (where both parents are included). Moreover, Khoo et al. (2008) and López-Sintas et al. (2017) also included grandparents, in addition to parents and adolescents. Finally, studies with mixed methodology used dyads as well in the sample design.

The most used instrument is the questionnaire, specifically aimed to study the ways in which adolescents and their parents use digital media together (Correa et al., 2015; Nelissen et al., 2019; Nelissen & Van den Bulck, 2018; and Padilla-Walker et al., 2012).

Table 2. Characteristics of the research methodologies

Article	Tecnology resource	Design	Sample	Measures
Wang (2020).	Technological role-reversal activities (setting up new digital devices, installing new applications and so on).	Qualitative.	40 Chinese study mothers. The average age were 42 years for mothers and 13.5 years for children.	Ethnographic method of content-context diary cum participant observation.
Galperin & Arcidiacono (2019).	Internet.	Quantitative.	Household surveys conducted by national statistical offices in Bolivia (n=36,618); Colombia (n=76,026); Ecuador (n=112,821); Mexico (n=99,503); Peru (n=55,367) and Uruguay (n=131,857). Interviews were administered to heads of household or spouses.	Independent and outcome variables of these large-scale surveys were presence of children (5-17 years old); residential Internet access and individual Internet use. Covariates were age and gender, education, income, household size, urban/rural location, employment status and language.
Nelissen et al. (2019).	Internet, computer, tablet, Smartphone and app.	Quantitative.	Wave 1: 204 parent–child dyads. Wave 2: 109 parent–child dyads. 78.92% were mothers and the average age was 44.13 years for parents and 13.77 years for children.	FAME2 (Family and Media) survey. The questionnaire included sociodemographic questions of the parent and the child; Internet self-efficacy scale based on the scale of Correa et al. (2013) measure of perceived digital influence on digital learning; parent-to-child digital media influence adapted from Correa's (2014) and child-to-parent influences digital media influence.
Nelissen &Van den Bulck (2018).	Computer, Smartphone, tablet, apps, Internet, Office programs/ pages, email, uploading files/pictures, online purchases, chatting, social media and online gaming.	Quantitative.	187 parent-child dyads. 73.08% were mothers and the average age was 45.78 years for parents and 14.89 years for children.	The FAME survey included sociodemographic questions of the parent and the child; child–parent digital media guidance adapted from Correa (2012), and an index that measured child–parent digital media guidance was created; a measure for parent–child media conflicts, which was adapted from the study of Mesch (2006), and parents and their child were also asked about their overall conflicts.
Article	**Tecnology resource**	**Design**	**Sample**	**Measures**

López-Sintas et al. (2017).	Computers, tablets, video consoles and Smartphones.	Qualitative.	30 informants. 50% were women aged 17-58 years old.	Semi-structured interviews with sociodemographic questions and 20 questions about digital access and use, type of home entertainment, the characteristics of digital leisure in parents' homes, the characteristics of shared digital leisure at home and features of digital products.
Correa (2016).	Computers, mobiles and Internet.	Quantitative.	242 child-parent dyads. 63% were mothers and the average age was 44 years for parents and 15 years for children.	The questionnaire included sociodemographic questions and the following variables: youths as brokers in technology adoption; youth's persuasive strategies and parents´ motivations toward technology.
Correa (2015).	Computers, mobiles and Internet.	Quantitative.	242 child-parent dyads. 63% were mothers and the average age was 44 years for parents and 15 years for children.	The questionnaire included sociodemographic questions and the following variables: youths' perceived influence on technology adoption; youths' perceived influence on technology learning; parent–child relationship and technology use.
Eynon & Helsper (2015).	Internet.	Quantitative.	Study 1: 2057 respondents (14 years and older). Study 2: 1032 children (9-16 years) and one of their parents.	Study 1: Oxford Internet Survey, including individual socio-demographic characteristics of the adult; contextual indicators; adult Internet access and use indicators; adult users' confidence and attitudes to use the Internet and adult users' engagement with the Internet. Study 2: EU Kids Online II project (2009–2011), including characteristics of the child (age, skills, and confidence in using the Internet) and the parent (age, education, and Internet access locations).
Correa et al. (2015).	Internet.	Quantitative.	1701 adults (18 years old and older).	Survey called the "Austin Internet and the Global Citizens Survey", including structural factors; children as Internet brokers; Internet self-efficacy and online activities.

Article	**Tecnology resource**	**Design**	**Sample**	**Measures**
Correa	Computers,	Mixed.	Qualitative study: 14 child-	Qualitative study: semi

(2014).	mobiles and Internet.		parent dyads involving one 12-18 years old child and one parent. Quantitative study: 242 child-parent dyads. 63% were mothers and the average age was 44 years for parents and 15 years for children.	structured in depth interviews including the following topics: relationships with and level of usage of digital media, perceived influence of children in acquiring and learning how to use these tools, other sources of learning inputs, and family relationship and interactions. Quantitative study: The questionnaire included structural factors; youths as brokers in technology learning; parental authority (Steinberg et al., 1994) and child–parent interactions (Eron, 1982; Tamizado et al., 2000).
Barrera & Duque (2014).	Internet.	Mixed.	Quantitative study: 141 parents and 226 adolescents. Qualitative study: Semi-structured individual interviews conducted with 9 parents and 8 adolescent and four focus groups with adolescents.	It is not described.
Paus-Hasebrink et al. (2013).	Internet.	Quantitative.	The data were taken from EU Kids Online: 19,406 children aged 11-16 plus one of their parents.	The concept of parental mediation was measured by means of three subscales of which all items were asked both parents and children including parental mediation; competence and literacy; proximity, trust, and reciprocity.
Correa et al. (2015).	Internet.	Quantitative.	1701 adults (18 years old and older).	Survey called the "Austin Internet and the Global Citizens Survey", including structural factors; children as Internet brokers; Internet self-efficacy and online activities.
Padilla-Walker et al. (2012).	Cell phone, TV and movies, email, video games and social networking sites.	Quantitative.	453 families with a child between the ages of 13-16. (139 single-parent, mother-headed).	The questionnaire included family media use and parent-child connection using the support subscale of the Parenting Styles and Dimensions Questionnaire-Short Version (PSDQ; Robinson et al., 2001).

Article	**Tecnology**	**Design**	**Sample**	**Measures**

	resource			
Khoo et al. (2008).	Mixed reality gaming.	Mixed.	10 subjects. 50% 45-60 years old 50% 16-20 years old. 60% male.	Qualitative observation; Q&A form with 16 questions about concentration, challenge, player skills, control, clear goals, feedback, immersion and social interaction and an interview.

Source: own elaboration

3.3. Theoretical foundation

Six main theoretical bases associated with digital leisure in families with adolescents have been discovered:

(1) Theoretical frameworks based on *bidirectional socialization* and *bottom-up technology transmission* argues that the traditional unidirectional socialization has changed to a current approach that encourages a more interactive and bidirectional process, promoted by the consumption of digital technology, mainly by adolescents (Correa 2014, 2015, 2016; Correa et al., 2015; Paus-Hasebrink et al., 2013; Nelissen and Van den Bulck, 2018; and Wang, 2020).

(2) The *digital gap* framework includes theories of the social and digital divide related to gender, age, and socioeconomic status (Correa, 2015; 2016; Khoo et. al, 2008), as well as the urban-rural connectivity gap (Galperin and Arcidiacono, 2019).

(3) The background based on the *type of access and technological use* is related to the theories of the socio-digital divide. Correa (2016) found that when there is the presence of a young person in the household, they help the digital inclusion of their parents. In addition, when parents understand the facility of use and the utility of the Internet, they are encouraged to break with the socio-digital gap of technological access and use.

(4) Theoretical foundations focused on *parental monitoring* refer to parental mediation theories, including those based on parenting styles and parental mediation styles, parental mediation strategies or even parental media monitoring. In this sense, restrictive parental mediation is analyzed, whereas active mediation is not so thoroughly covered. The active mediation is associated with a wider range of online activities and digital skills of adolescents (Paus-Hasebrink et al., 2013). In turn, studies such as the one conducted by Nelissen et al. (2019) suggest considering a new media mediation strategy called "participatory learning". This strategy considers how parents and adolescents learn from each other in their use of digital media.

(5) *The significant importance of the Internet* background reflects the relevance of the development of digital technology, especially the Internet, although in society there is a dichotomy between the value given to it and the rejection and fear it generates. However, according to Padilla-Walker et al. (2012) and Paus-Hasebrink et al. (2013) there is a common fear related to the risks involved depending on the type of Internet use.

(6) The theoretical base of *the development of technologies in the home and the transformation of leisure* is characterized by the fact that, on the one hand, the proliferation of digital devices has increased the diversity of leisure activities carried out privately in the home. On the other hand, the introduction and domestication of ICTs has also blurred space-time boundaries. All this has changed the way in which we relate to and consume leisure nowadays, with a positive influence on the functioning of the family (López-Sintas et al., 2017).

3.4. The results of the included scientific production

As shown in table 3, according to the objectives of each included studies, four dimensions were identified:

Bottom-up technology transmission. Most studies indicate that adolescents influence their parents' acquisition of technology to an extent. Nelissen and Van den Bulck (2018) reveal that young people perceive themselves and are perceived by their parents as active agents in media guidance. However, Correa (2014) points out that adolescents' report more degree of influence of the technology on their parents, while parents report not recognizing this degree of influence as significative. In addition, it was observed that the type of influence depends on digital devices. Thus, smartphones and the Internet are the most used technology resources in adolescence-parental digital guidance (Correa, 2016; Correa et al., 2015; Eynon & Hesper, 2015; Nelissen & Van den Bulck. 2018). Additionally, it was found that adolescents aged 10 years or older, of female gender, with low socioeconomic status, and who use argumentative persuasive strategies, exert a greater influence in the transmission of upstream technology. However, according to Eynon and Helsper (2015), even though adolescents can influence their parents' Internet use skills, parental characteristics (education, age, and socioeconomic status) are more important, as well as parental motivation, with the perceived usefulness of the Internet being more influential than its ease of use (Correa, 2016). Also, it was found that as parents age, the greater the influence exerted by adolescents; this being more frequent in mothers with low socioeconomic status (Correa et al., 2015), but if parents are authoritarian adolescents exert less ascending technology transmission (Correa, 2014). In addition, Galperin and Arcidiacono (2019) observed that, although adolescents can be a stimulus for parents in the use of technology (the learning effect), they can also displace them as users of technologies, performing for them tasks related to digital technology and impeding the acquisition of Internet skills (the leaning effect).

Transformation of leisure activities at home and Internet use. With respect to this dimension, there are three aspects to highlight:

(1) The first aspect is related to the transformation of digital leisure at home, which has been identified by López-Sintas et al. (2017). These authors evidence that there has been a replacement of traditional leisure activities by other digital leisure activities, which are characterized by fragmenting leisure time and improving the simultaneity of these activities, transforming the value of them. Therefore, digital leisure offers greater accessibility, reduced costs, and time. There is also greater satisfaction with digital leisure at home, considering this practice as an opportunity for learning and personal enrichment, and not only as entertainment.

(2) The second aspect related to the transformation of leisure activities at home is related to the uses and skills in the management of the Internet. Valencia & Gómez (2014) establish three types of uses and skills in the management of the Internet by parents. On the one hand, those who have an indirect relationship with the Internet and the computer only approach these media to control the time of use of their adolescents, create the rules and mediate the family-Internet relationship, generating greater family conflicts because of a computer gap. On the other hand, those who make a direct use, but with limitations. Finally, those who have a high level of management. The latter two produce a positive change in family interactions by offering a more accessible approach between parents and adolescents related to the digital environment.

(3) The third and last aspect, about the relationship established between parent-adolescent and Internet, Paus-Hasebrink et al. (2013), indicate four types of parent-adolescent relationships and Internet. Family type 1 (the digital native vs digital immigrant family), adolescents who are more skilled than their parents and use the Internet independently; type 2 (the unskilled family) adolescents who have just started to use the Internet, have low skills, and receive little support from their parents; type 3 (the tripe C family: confident, caring, and

communicative parent-child relationship) adolescents who use the Internet very frequently and exchange information about it with their parents. Family type 3 is characterized by high levels of active mediation and low levels of restrictive mediation, this being the most abundant type and characterized by living in rich countries with advanced infrastructures and high social capital; type 4 (the protective family), this type is the least widespread, although it is characterized by more restrictive parents and daughters being the most likely to belong to this group.

The digital divide. Although the digital gap is related to socioeconomic conditions, it is true that this particular condition is not always observed. Regarding the influence of social economic status (SES), Correa (2015), revealed that when adolescents acted as technology brokers and brought technology home by influencing computer acquisition or by teaching their parents how to use computers, people of a lower SES used computers more. Likewise, the computer gap of parents with lower SES was reduced when young people have more perceived influence on computer learning. However, Paus-Hasebrink et al. (2013) expose that the digital divide in the family is due to the relationship between its members, in fact, a very low level of any type of parental mediation and a low level of proximity between parents and adolescents are related to the generational digital divide. This type of parent-child relationship is not connected to SES.

Family connection and interaction. According to Padilla-Walker et al. (2012), the two most used media in the family are cell phones and television. In addition, cell phone use among parents and adolescents was significantly associated with higher levels of family connection. Thus, Khoo et al. (2008), found that the greater the family connection and interaction, the greater the enjoyment of digital leisure in the family (Khoo et al., 2008). In addition, Wang (2020) found that less digitally competent mothers viewed their adolescents' reliance on technology use as a valuable opportunity for intimate parent-child interactions (Wang et al., 2020).

Table 3. Objectives and main results of included studies

Article	Technology resource	Design
Wang (2020).	To search through the multi-dimensional technological role-reversal activities of Chinese "study mothers" and their adolescent children, with special focus on invisible emotional labours and subjective attitudes.	Adolescent engaged in a wide range of technological role-reversal activities, including mediation of parents' ICT use behavior, solving emergent digital problem, setting up new digital devices and installing new applications and so on. In these activities, both mothers and adolescent experienced various types of emotional labours, and hence developed idiosyncratic strategies to overcome these emotional dilemmas and properly negotiation parent-child relationships.
Galperin & Arcidiacono (2019).	To analyse if the presence of adolescent in the household decreases or increases adults' Internet use.	The presence of adolescent (11-17 years old) has significant positive effects on the likelihood of having residential Internet access, but it is negatively correlated with Internet use by adults. This suggests that leaning effects may be stronger than commonly assumed, outweighing the intergenerational transfer of motivation and skills (the learning effect).
Nelissen et al. (2019).	To delve into parent-to-child and child-to-parent digital media influence together in a bidirectional socialization model, focusing on digital media influence and Internet self-efficacy.	Exists two indications of bidirectionality between parents and adolescent in media use. First, statistical indications of bidirectional influences as higher Internet self-efficacy of the parent were associated with lower child-to-parent digital media influence and vice versa. Second, self-reported indications of bidirectional influences, as parents and adolescent both reported to influence each other's digital media use.
Nelissen &Van den	To explore whether this child–parent digital media guidance is	Adolescents guide their parents how to use digital media, especially for newer media forms such as smartphones, tablets,

Bulck (2018).	associated with media conflicts in the family.	and apps. Families where there was more child–parent digital media guidance reported more conflicts about media.
López-Sintas et al. (2017).	To describe and to interpret how digital technologies are transforming the home-based leisure activities, how technologies complement leisure activities, how decision-making varies according to household members and what the implications are for the satisfaction obtained from home-based leisure activities.	Most of the informants reported frequently replacing leisure based on more traditional technologies with digital leisure and changing the way in which leisure activities were developed at home. In addition, the interviewees suggest that leisure activities outside the home are less accessible than home-based digital leisure, and their value seems also to have varied with the introduction of home-based digital leisure. Digital leisure activities yield satisfactions to the informants. Some of these satisfactions are those provided by traditional leisure activities, other satisfactions seem to be exclusive to digital leisure activities, for instance, personal enrichment.

Article	**Technology resource**	**Design**
Correa (2016).	To examine to what extent the phenomenon of youths' influence on parents' technology acquisition occurs and the factors that may intervene in the process, including adolescent's persuasive strategies (argumentative vs. non-argumentative) and parents' attitudes toward technology (perceived ease of use and perceived usefulness)	Youths influence their parents' acquisition of all technologies under study, particularly the Internet. Regarding this result, three sociodemographic factors become relevant: youth's age, gender, and SES. Argumentative strategies have a greater influence than non-argumentative strategies. Parents' perceived usefulness played a more important role than perceived ease of use in the influence process.
Correa (2015).	To explore to what extent youths' perceived influence on their parents' adoption of and learning about digital media is related to digital inequality.	Adolescents' perceived influence on their parents' adoption of digital media and their learning processes were associated with reductions of socioeconomic gaps in technology use, particularly regarding computer and Internet use.
Eynon & Helsper (2015).	To understand how significant the presence of adolescent children in the household is compared to other factors in understanding adults' access, use and engagement with the Internet.	For access and skills, the individual characteristics of the adults (education age and social capital) are more important to consider in relation to their skills and engagement with the Internet than the adolescents. Nevertheless, it is true that the age of the child matters. Both access to and use of the Internet by adults is higher in households with pre-teens or teens but this is not the case for households with children under 10.
Correa et al. (2015).	To investigate to what extent sons and daughters influence their parents' adoption of digital media, particularly the internet, compared to other influence sources. It also explored structural factors that play a role in this bottom-up process, such as socio-economic differences and gender. Finally, it examined the relationship between this bottom-up technology transmission process and parents' levels of internet self-efficacy and online activities.	Adolescents play a role in including their parents in the digital environment, particularly among women, people who are older (35 years old and above) and belong to lower socio-economic groups. We also found that this bottom-up technology transmission is somewhat negatively associated with parents' internet self-efficacy.

Correa (2014).	To study the bottom-up technology transmission process and how youths teach their parents to use digital media by proposing a typology of factors that may intervene in the process.	The transmission occurs for all the technologies investigated, although adolescent's influence should not be overstated. This process was more likely to occur among people from lower socioeconomic status and women, and it was also associated with more fluid parent-child interactions and less authoritarian parents.
Barrera & Duque (2014).	To analyse the changes attributed by the family members to their family dynamics as a result of their use of the internet.	There are three types of use and skills in the use of the Internet by parents: 1) Those who do not make direct use of the Internet or the computer but have an indirect relationship with it. 2) Those who do make direct use, but with limitations or at least not as much expertise. 3) The highly skilled. The relationship that its members establish with the Internet modifies family dynamics in a negative or positive way. There are several families for whom the use of the internet has had many advantages in terms of improving the relationship between parents and adolescents. Its use has made it possible for family members to establish new forms of communication as topics of interest emerge to talk about, as well as activities in which these people have meeting points.
Article	**Technology resource**	**Design**
Paus-Hasebrink et al. (2013).	To dig into internet-related parent-child relationships across twenty-five European countries. Parent-child dyads are analysed in terms of parental mediation, digital competence and communicative proximity.	Four types of parent-child relationship were identified: 1) The Digital Native Versus Digital Immigrant Family. 2) The Unskilled Family. 3) The Triple C Family. 4) The Protective Family. These types are shaped by several factors on the level of child, family, and country, with the adolescent's age and internet use being the most important predictors.
Padilla-Walker et al. (2012).	To examine the relations between family media use and family connection	Cell phone use and watching television or movies were the most common mediums used in families. Greater amounts of family cell phone use, coviewing of TV and movies, and coplaying of video games were associated with higher levels of family connection. Conversely, engagement over social networking sites was related to lower levels of family connection, at least from the adolescent's perspective.
Khoo et al. (2008).	To submit a novel intergeneration social-physical game called Age Invaders (AI), which allows the elderly to play harmoniously together with adolescents in the physical space, while parents can participate in the game play in real time remotely in the virtual world through the internet.	The main goals of age invaders for the elderly generally focus on four major areas: social, physical, cognitive and psychological: 1) The social aspect emphasizes family and inter-generational social interaction, sharing and support. 2)The physical aspect attends to the aging individual's need for physical exercise and expression. 3) The cognitive aspect stimulates the mental functioning and improves the elderly adult's mental stimulation. 4) The psychological aspect refers to promoting personal integration, to the expression of emotions, and feelings of self-worth and wellbeing in a family interaction context.

Source: own elaboration

4. Discussion

The main purpose of this systematic review was to identify the characteristics of the role of digital leisure in family relationships with the presence of adolescents. For this, we described the bibliographic characteristics of the scientific production on shared digital leisure in families; we specified the research methods and techniques used; we presented the underlying framework supporting these studies and related the research objectives to the findings.

4.1. Bibliographic characteristics of included studies

On the one hand, the author of reference in studies on shared digital leisure in families with adolescents is Correa (n=4). This author is an associate professor in the Faculty of Communication at Diego Portales University. Her main line of research is the use of digital media in family contexts using dyadic data (parents- adolescents). Three of her articles refer to the same sample, although she analyses different aspects (see in: Correa, 2014, 2015, 2016). In addition, Correa's contribution is considered relevant inasmuch as it discusses the role of adolescents in the transmission of technology and points out the importance of bidirectional socialization. Nevertheless, this phenomenon does not only occur in digital media. Katz (2010) argues that in immigrant families' adolescents help their parents to be included in the new environment by acting as language and culture brokers. On the other hand, journals such as the Journal Children and Media, New Media & Society and Information, Communication & Society, stand out for having a high scientific production in studies related to how ICTs affect daily life, family structure and leisure activities.

The increasing interest in this area of research coincides with the continuous growth of Internet users since 2014 (We Are Social & Hootsuite, 2015). This could explain why most of the studies included in this systematic review have been published in the last 7 years. Likewise, Van Dijck (2016) points out that technology interaction has given rise to *a connected society*, characterized by an unprecedented way of being with others. This has triggered the scientific interest of several authors on this subject. Therefore, being a relatively new field, the number of citations of the analyzed production is not too high, and more time is needed for its dissemination, as well as more research on the subject.

4.2. Characteristics of the research methodologies

The most analyzed technological resources in digital leisure are the Internet and the Smartphone. This data makes sense because according to the Digital 2021 report, 59.5% of the global population are internet users and 9 in 10 say they go online via a smartphone (We Are Social & Hootsuite, 2021).

Regarding research methodology, only two of the included articles used a qualitative methodology, three have mixed methodology and nine are quantitative studies. While quantitative studies have focused on the effect of technological resources in the family, qualitative studies have focused on how ICTs have transformed leisure experiences at home (López-Sintas et al., 2017), as well as their impact on the routine of family life, interactions, and emotions among its members (Wang, 2020).

The analysis of the sample is mostly focused on the study of parent-adolescent dyads, attending to adolescents in secondary education with an average age between 14 and 15 years, while the average age of parents is 44 years. It was also observed that almost all the articles deal with biparental families (traditional families). This may constitute a bias in the analysis by not considering family diversity, given that single-parent families may have less time to reconcile family life with work, which generates impact on the digital leisure time shared as a family (Martín et al., 2018), which is why it is necessary to include the different family structures in studies of this nature.

Studies' samples focus more on maternal than paternal presence, which limits the extent of the results. It is worth to note what Symons et al. (2017) argue when it comes to parental mediation of adolescent's Internet use, that mothers are more engaged than fathers, as they spend more time with their adolescents and assume more responsibilities in parenting than fathers. Nonetheless, according to the results obtained by Martín et al. (2018) fathers, in contrast to mothers, play video games more frequently with their adolescents. And although it is true that most fathers still do not take an active role in the parenting process, the gap is decreasing (Ponnet et al., 2015).

4.3. Theoretical foundation

The theoretical frameworks of the articles included show the need to attend to the leisure activities mediated by digital resources and the family relationships that occur in this context in an interrelated manner, since studies on digital leisure in the family are usually limited to more formal environments (for instance, educational or health-related applications) with less emphasis on the personal impact and, above all, in the family environment.

Although most of the existing literature on digital leisure highlights elements of discrimination and exclusion that belong to the theories of the social and digital divide, the studies in this systematic

review are based on the concept of digital inclusion. According to Van Deursen & Van Dijk (2011) the concept of digital inclusion involves multiple dimensions, such as technological access, skills, differentiated use, social contexts, and support. However, despite the importance of the commented theories, new theoretical frameworks that investigated the *bottom-up technology transmission* and *bidirectional socialization* (Correa, 2014, 2015) are contemplated, also named by Katz (2014) as *media intermediation* between adolescent and their parents.

It should also be noted that even considering family dynamics' related aspects such as interaction, limits or communication, there is no explicit reference to this topic in the theoretical framework, as most of them are defined as consequences of the use of digital media in the family, appearing to a greater extent in their results, discussion, and conclusion. In turn, Callejo & Gutiérrez (2012), warn that the rise of digital technology is changing family dynamics. This is because digital society enables other forms of interpersonal contact, especially among adolescents. Of these technologies, the Internet is related to the development of family life, modifying habits and customs of its members (Winocur, 2009). With regards to shared leisure activities in the family, these have been influenced by the penetration of digital technology in the home. According to Churchill et al. (2007) it still depends on the type of household whether digital technology is seen as an opportunity to stay connected, to have fun as a family and even to coordinate better, or on the contrary, whether it is perceived as a threat to their unity. However, leisure activities mediated by digital technology are gaining importance in everyday life, thus causing an impact on the type of parent-child relationships (Yubero et al, 2018). Therefore, it would be necessary to include in the studies the use of digital resources for shared digital leisure in the family as an established fact.

4.4. The results of the included scientific production

The results obtained in this systematic review present different approaches.

The first approach analyses digital leisure activities in specific ways, with bottom-up technology transmission being the most named. The second approach investigates more general activities such as the transformation of leisure at home, the significance of the Internet by parents and adolescents, and the relationships built around the Internet. In this sense, there are findings that argue that digital leisure has negative consequences on family relationships with adolescents, by causing distancing from each other and stressing the digital intergenerational gap. In addition, it was found that conflicts generated using digital resources are more frequent in families where conflicts already exist (Nelissen & Van den Bulck, 2018).

Our results confirm that the presence of adolescents in the home encourages adults to have access to the Internet, helping their parents' inclusion in the digital environment. Moreover, according to Eynon & Hesper (2015), both access and use of the Internet by adults is higher in households with pre-teens or adolescents than those with children in lower ages. In this line, Haddon (2006) demonstrated in his study that indeed households with adolescents are more likely to have access to the Internet and digital devices. In turn, Ito et al. (2009), state that adolescents play a key brokering role as family technology experts, helping parents domesticate new technologies and learn new skills. However, Van den Bulck & Van den Bergh (2005) point out that this idea of teen's influential effects remains alien to many researchers. In contrast, more critical evaluations of this influential child's effect suggest that *learning from* and *leaning on* occur simultaneously in the context of domestic infrastructure, making it difficult to disentangle one process from the other (Livingstone, 2002). Thus, Eynon & Helsper (2015) have emphasized that there is a limited amount of research that has explored whether and under what conditions bottom-up technology transmission occurs.

Concerning gender perspective, Cooper (2006) considers that because people have been socialized with the idea that technology is a male domain, it makes sense to expect boys to have more influence than girls in the adoption of technology by their parents. However, Correa (2016) counters the aforementioned statement, by arguing that girls are more likely than boys to influence their parents' acquisition of laptops.

In summary, this systematic review sheds light on the use of digital leisure within the family context with adolescents, pointing out its positive effects on parents and adolescents (cooperative learning, development of new skills and abilities, creativity, communication, improved social relationships, sense of well-being and family cohesion). This has implied important changes related to

socialization processes, technological access, family education, healthy habits in the young people themselves and even in parental style.

5. Future directions

We conclude this review with some theoretical and methodological suggestions for future research.

First, further exploration is needed on if adolescents influence their parents' digital inclusion and how it affects the type of digital leisure practiced as a family and the frequency of it to determine its impact on family dynamics. In this regard, in this systematic review, we found that bottom-up technology transmission, often focused on Internet use, enables parents and teenagers to engage in leisure activities such as playing online games together, visiting cultural museums, watching series or movies together, among other activities. In addition, many of these parents are encouraged to make use of digital technology simply for the purpose of interacting with their adolescents and to understand and be part of the virtual world in which they are developing.

Secondly, it is considered necessary to emphasize the definition of *shared family digital leisure* and the repercussions of this on family dynamics beyond online gaming or the use of the internet, since, as indicated, in this work we understand digital leisure to be any activity mediated by digital media that is done voluntarily.

We would also like to note that, while it is true that digital leisure is receiving increasing attention from academics in the last decade (Wood et al., 2019), this review is one of the first to include studies focused on the role of shared digital leisure in families with adolescents. In this way, we have detected that digital media are deeply rooted in the life of today's families and not considering this would not allow us to understand the interaction between technology-society-family. Therefore, knowing that leisure is in continuous change due to the incessant advances of technology today, more research is needed to identify and understand in depth the characteristics of this interaction. For this reason, further research in this area would help to establish new theoretical frameworks about the role of digital leisure within the context families. One way to build this knowledge can be through longitudinal empirical studies. This would allow family and recreational professionals to design programs based on the beneficial characteristics of technology for the practice of leisure activities between parents and adolescents to have a positive impact on their relationship, mitigating the negative effects.

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